

[54] **PROCESS AND APPARATUS FOR OXIDIZING INDUSTRIAL SPENT CAUSTIC AND EFFECTING GAS-LIQUID MASS TRANSFER AND SEPARATION**

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[57] ABSTRACT

An improved apparatus and process for oxidizing industrial spent caustic streams, whereby oxidation of spent caustic occurs in a unitary processing tower with three chambers that cooperate simultaneously to oxidize the caustic in the first chamber; to separate the caustic from the oxidizing gas in the second chamber; and, in the third chamber, to pass gas and cooled caustic through a mass transfer apparatus that cools and cleans the gas and releases the caustic and gas into a gas-liquid separation zone of the upper chamber. An alternative embodiment of the invention involves spatially separating the upper chamber from the other two chambers.

22 Claims, 3 Drawing Sheets

